

What is claimed is:

- 1 1. A terminal certification system comprising:
 - 2 a plurality of terminals; and
 - 3 a connection apparatus connected to said terminals,
 - 4 wherein said connection apparatus and said plurality of
 - 5 terminals each includes a password controller which changes a
 - 6 password according to passage of time, and
 - 7 wherein when said terminal tries to communicate with another
 - 8 terminal, said connection apparatus permits the communication if
 - 9 a password generated by the password controller of said terminal
 - 0 is in agreement with a password generated by the password controller
 - 1 of said connection apparatus.
- 1 2. The terminal certification system according to claim 1,
 - 2 wherein said connection apparatus further includes:
 - 3 a frame transfer processing element which performs
 - 4 transmission/receipt of a frame to/from said network;
 - 5 a plurality of interfaces connected to said terminals,
 - 6 respectively; and
 - 7 a password comparator which compares a password added to the
 - 8 frame transmitted from said each terminal with the password selected
 - 9 by said password controller of said connection apparatus, and
 - 10 wherein when said password comparator shows an agreement of
 - 11 the passwords, said interface transfers the corresponding frame to
 - 12 said frame transfer processing element, and when said password
 - 13 comparator shows a disagreement of the passwords, said interface

14 abandons the corresponding frame.

1 3. The terminal certification system according to claim 1,
2 wherein said password controller includes:

3 a password storing memory which stores a plurality of
4 passwords; and

5 a password selector which selects one of the plurality of
6 passwords stored in the password storing memory, and

7 wherein said password selector changes a selection of the
8 password according to passage of time.

1 4. The terminal certification system according to claim 3,
2 wherein said password controller further includes:

3 a timer; and

4 a setting memory which stores setting information indicating
5 which password is to be used depending on time, and

6 wherein when the terminal is connected to said connection
7 apparatus, said timer of said password controller of said terminal
8 is made to be synchronized with said timer of said password controller
9 of said connection apparatus, and said password selector changes
10 the selection of the password in accordance with a time represented
11 by said timer and said setting information.

1 5. The terminal certification system according to claim 4,
2 wherein each of said plurality of terminals further includes:

3 a frame transmission/receipt element which controls
4 transmission/receipt of the frame to/from said connection apparatus,

5 and

6 a frame assembly element which receives a password from said
7 password controller and adds the password to the frame when the frame
8 is transmitted to said connection apparatus.

1 6. The terminal certification system according to claim 5,
2 wherein said frame assembly element further receives a
3 password selection time from said password controller, and adds the
4 password and the password selection time to a frame to be transmitted
5 to said connection apparatus.

A copy of the present application is on file in the U.S. Patent and Trademark Office.

1 7. The terminal certification system according to claim 6,
2 wherein the password controller of said connection apparatus
3 further includes an effective time storing memory which stores a
4 predetermined effective time, and
5 wherein if a difference between a time represented by said
6 timer and said password selection time is within the effective time,
7 said password selector selects a password to be used, based on said
8 password selection time and said setting information, and if the
9 difference between the time represented by said timer and said
10 password selection time is equal to the effective time or more, said
11 password selection sector a password to be used, based on the time
12 represented by said timer of said connection apparatus and said
13 setting information.

1 8. The terminal certification system according to claim 1,
2 wherein said password controller includes:

3 an algorithm storing memory which stores a plurality of
4 password generation algorithms; and

5 a password generation element which selects one of said
6 plurality of password generation algorithms stored in the algorithm
7 storing memory, and which generates a password with the selected
8 password generation algorithm, and

9 wherein said password generation element changes the password
10 generation algorithm in accordance with passage of time, and
11 generates a password.

1 9. The terminal certification system according to claim 8,
2 wherein said password controller further includes:
3 a timer; and

4 a setting memory which stores setting information indicating
5 which password generation algorithm is used depending time, and
6 wherein said timer of said password controller of said
7 terminal is made to be synchronized with said timer of said password
8 controller of said connection apparatus when said terminal is
9 connected to said connection apparatus, and said password generation
10 element selects a password generation algorithm in accordance with
11 a time represented by said timer and said setting information, thus
12 generating a password.

1 10. The terminal certification system according to claim 8,
2 wherein each of said plurality of password generation
3 algorithms generates a different password in accordance with the
4 time represented by said timer.

1 11. A method of certifying a terminal comprising:
2 synchronizing times of a connection apparatus and said
3 terminal with each other;
4 selecting a password in accordance with a time of said
5 terminal;
6 adding the password to a frame to be transmitted;
7 transmitting the frame added the password from said terminal
8 to said connection apparatus;
9 comparing the password which is added to the transmitted frame
10 with a password selected in accordance with the time of said
11 connection apparatus; and

12 permitting the transmission of the frame if said two passwords
13 are in agreement with each other, and prohibiting the transmission
14 of the frame and abandoning the frame if said two passwords are not
15 in agreement with each other.

1 12. The method according to claim 11,
2 wherein said selecting step selects one of a plurality of
3 password generation algorithms in accordance with a time of said
4 terminal, and generates a password based on the selected password
5 generation algorithm; and

6 said comparing step compares the password added to the
7 transmitted frame with a password generated by one of a plurality
8 of password generation algorithms in said connection apparatus
9 selected in accordance with the time of said connection apparatus.

1 13. The method according to claim 11,

2 wherein said adding step further adds a selection time, at
3 which said password is selected, to a frame to be transmitted; and
4 said comparing step compares the password which is added to
5 the transmitted frame with a password selected in said connection
6 apparatus depending on said selection time added to the transmitted
7 frame.

1 14. The method according to claim 13, wherein
2 said selecting step selects one of a plurality of password
3 generation algorithms in accordance with a time of said terminal,
4 and generates a password based on the selected password generation
5 algorithm;

6 said adding step adds the password and a selection time, at
7 which said password is generated, to a frame to be transmitted; and
8 said comparing step compares the password added to the
9 transmitted frame with a password generated by one of a plurality
0 of password generation algorithms in said connection apparatus
1 selected in accordance with said selection time added to the
2 transmitted frame.

1 15. A connection apparatus connected to a plurality of
2 terminals comprising:

3 a password controller which changes a password according to
4 passage of time; and

5 a password comparator which compares a password added to
6 a frame sent from one of said plurality of terminals with a
7 password generated by said password controller,

8 wherein when a frame is sent from one of said plurality of
9 terminals, said connection apparatus permits the transmission
10 of the frame if said password comparator indicates that the
11 password of the frame and the password generated by said password
12 controller are in agreement with each other.

1 16. The connection apparatus according to claim 15,
2 wherein said password controller includes:
3 a password storing memory which stores a plurality of
4 passwords; and
5 a password selector which selects one of the plurality of
6 passwords stored in the password storing memory, and
7 wherein said password selector changes a selection of the
8 password according to passage of time.